



ICAO

International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

NACC/DCA/07 — WP/21
06/09/17

**Seventh Meeting of the North American, Central American and Caribbean Directors of Civil Aviation
(NACC/DCA/07)**

Washington, D. C., United States, 19 – 21 September 2017

**Agenda Item 2: Accountability Report of the ICAO NACC No Country Left Behind (NCLB)
Strategy**

BEST PRACTICES OF CHANGE MANAGEMENT IN AVIATION

(Presented by France)

EXECUTIVE SUMMARY

This paper presents the importance of applying Change Management processes in the frame of modernization projects and suggests in particular to include specific Change management actions in the frame of the NCLB Campaign to ensure safe, efficient and sustainable projects implementations and progresses.

Change Management is an essential component of the Safety Management System and Aviation Stakeholders are encouraged to manage Change through a PDCA — Plan-Do-Check-Adjust—cycle allowing a continuous improvement and facilitating the implementation of a sustainable Change. Key change enablers such as staff involvement, communication and training should also be integrated in the change management best practices.

Action:	Refer to section 5
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency
<i>References:</i>	<ul style="list-style-type: none">• ICAO Safety Management System Manual

1. Introduction

1.1 Aviation is a fast changing industry

1.1.1 Since the establishment of ICAO in 1944, Civil Aviation has dramatically changed from the one our glorious pioneers had known in terms of organization, facilities, systems, aircraft types and performances, concepts, business models, regulation and volumes.

1.1.2 The important growth of the world air traffic — the number of passengers is expected to double¹ by 2035— calls for more capacitive facilities, more nav aids, more capacitive airspaces, more

¹ IATA: <http://www.iata.org/pressroom/pr/Pages/2016-10-18-02.aspx>

qualified staff, more automation to support more sophisticated concepts in terms of safety and performance.

1.3. In the past few decades, the rise of low-cost carriers, the emergence of airlines alliances or the advent of a service-oriented customer relationship revolutionized the business models of our industry as well as our habits as passengers. Today the rules keep being rewritten, some under the influence of the historical actors, some under the growing role of new comers where aviation is not their core historical competency.

1.4. But our industry is also challenged by new threats such as security issues and new challenges as environmental issues calling for a tighter regulation framework, a deeper international cooperation and more agility to implement the appropriate response to global and interdependent issues.

1.5. In short, **Aviation has changed, the industry is changing and will keep changing fast.** This context makes Aviation a highly challenging industry for all its stakeholders either Airport operators, civil aviation authorities, aircraft operators, air navigation service providers, ground handlers or system providers in order to continuously increase the level of safety, keep serving with excellence a skyrocketing number of passengers and ensure sustainable economic activities in an increasingly complex and competitive global Aviation world.

2. Critical issues related to change

2.1 To meet the challenge of increasing safety and performance while anticipating the inertia of the long-term cycles governing our industry, most Civil Aviation Authorities including the French DGCA and other Aviation stakeholders are involved in large and ambitious modernization projects both at national and regional level such as:

- Concepts implementation: Performance Based Navigation (PBN), Performance Based Communication and Surveillance (PBCS), Airport-Collaborative Decision Making (A-CDM), point merge, Air Traffic Flow Management (ATFM);
- Standards compliance in various domains: drones, airport certification;
- Deployment of tools and technology: Arrival MANager (AMAN), Departure MANager (DMAN), Advanced-Surface Movement Guidance and Control Systems (ASMGCS);
- Facilities and aircraft upgrade: fleet renewal, remote towers, terminal extension;
- Protection against emerging threats: drones, cybersecurity, terrorist attacks;
- Organizational changes: separating operators from regulators, optimizing resources, integrating new competencies...

2.2 To face a growing traffic demand and the implementation of the related safety and performance standards, modernization projects are definitely essential yet critical to the organization, as they stand to rupture the established balance and thus may jeopardize the current level of safety and performance under the influence of two challenges:

- **Pace of Change:** the change process may occur over a period of time which may be too short for the organization to assimilate the change. Whereas historical stakeholders often transitioned from A to B then C over several years or decades by maturing

concepts and anchoring the change deeply in their organization, some others have little alternative but to catch up with traffic demand or standards compliance by evolving directly from A to C or by reducing significantly the transition duration;

- **Magnitude of Change:** the change process might deeply modify the characteristics of the organization which as a result has to reconfigure itself and defines new references and processes. As an example, some ANSPs are currently undertaking vast modernization projects involving sometimes simultaneous changes like deploying ATM Systems, redesigning airspace or implementing new concepts.

2.3 In a fast-changing industry like Aviation, changing fast and/or changing at a large scale might be a vital necessity, yet compatible with safety and performance providing relevant mitigation actions are planned and applied to facilitate the change implementation.

2.4 The human factor is essential to this process as it is a key vector able to influence the course of change, sometimes as a mere support, sometimes as a catalyst, sometimes as an inhibitor. For ensuring a safe and efficient implementation of a sustainable change in the frame of modernization projects whatever the type or scale, **Aviation Stakeholders and their managers should not underestimate the key role of change management.**

3. Managing a sustainable change

3.1 What is *Change*?

3.1.1 Change is a transition process modifying one or several characteristics of a system (e.g. an organization, an individual, a procedure, a process...) from one state to another. The Change process can be triggered either by internal factors such as a new top management vision, a seek for a greater economic competitiveness...or by external factors (e.g. new ICAO standards, an accident urging for a change of process...).

3.2 A natural resistance to change

3.2.1 A fast-changing industry like Aviation, where safety and performance are so critical, is an exciting but stressful working environment which constantly upsets the references, questions the habits and crumbles the certainties. As a consequence, employees tend to be resistant to change due to insecurities, which can have several origins:

- Group effect amplifying the individual feeling that change might jeopardize the group advantages, working conditions, or positions within the organization;
- Mistrust in the organization, to be able to implement a safe and efficient Change process;
- Comfort zone which is what people can do and what they usually do;
- Previous negative experiences where change management was not addressed accordingly;
- Miscommunication about motivations or methodology for changing;
- Fear of the unknown;
- Loss of expertise induced by the growing role of automation in Aviation sectors...

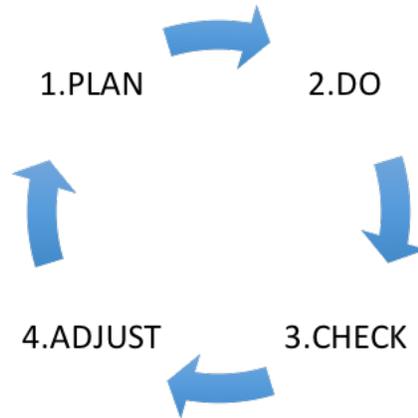
3.3 Managing the Change

3.3.1 In order to ensure a safe and efficient implementation of a sustainable Change, it is highly recommended to apply a Change management process taking into account the Human factor, including in the frame of technology-oriented projects.

3.3.2 ICAO defines Change management as “a formal process to manage changes within an organization in a systematic manner, so that changes which may impact identified hazards and risk mitigation strategies are accounted for, before the implementation of such changes”².

3.3.3 Change Management is a key component of the Safety Management System. ICAO mentions that “Safety management practices require that hazards resulting from change are systematically identified, and strategies to manage the consequential safety risks are developed, implemented and subsequently evaluated.” This is a continuous improvement process which can be based on the basic and efficient PDCA (Plan-Do-Check-Adjust) cycle:

- **PLAN:** start by establishing a diagnostic of the current situation mapping both assets and weaknesses then the change target outcome and finally a gap analysis to plan the change process. The diagnostic might include questions like why changing and what? What are the objectives, the stakeholders, the costs and expected benefits? What are the opportunities and threats? Is it the right time for changing? What are the current strengths and weaknesses of the organization? Is the project coherent with the organization priorities or others running projects? What are the different steps to implement the change and their schedule? What are the risks related to the changes and possible mitigation actions? Do the organization have at its disposal the appropriate human and financial resources throughout the project? What are the key performance indicators to measure the successful change implementation?
- **DO:** implement the change as defined in the planning step but remain flexible as unexpected events might occur requiring a slightly different path to reach the initial goal, anticipate these alternative paths;
- **CHECK:** monitor the key performance indicators and get feedback from the insiders concerned by the Change, for instance through a survey to identify the weaknesses and strengths of a new technology as seen by the end users and maintenance staff;
- **ADJUST:** make all the necessary corrections to the action plan in terms of objectives, schedule or resources, share the experience and keep records of the best practices, strengths and weaknesses to improve the current change as well as the design and implementation of future projects.



3.4 Change enablers

3.4.1 As Change implementation is sometimes a very challenging task, some factors can largely facilitate the accepting of change, implementation and sustainability especially when the organization is involved in a fast or large-scale change process:

- **Involve all the Stakeholders:** encourage the employees and customers concerned by the Change to give their opinion and share their experience, organize corporate study trips for employees and delegate specific tasks related to the project to them, as managers trust your employees, look for their perspectives and feedback of insiders, engage yourself in the Change process and support it from start to end. If the organization hires external consultants to implement a project, involve anyway your staff as much as you can to facilitate the transfer of competence, develop the autonomy and give a concrete meaning to the Change. This will reduce the cost of future projects and increase the efficiency of further improvement;
- **Communicate openly** to facilitate the accepting of change and reduce the misunderstandings: inform inside and outside the organization about your projects including the objectives, the schedule, the benefits for the different communities, organize awareness workshops and informational briefings, implement educational publications, use the modern means of communication to reach widely your targets. Communicating will ease the acceptance of change and reduce the misunderstandings;
- **Invest in training** to reduce the reluctance for the unknown and facilitate the appropriation of new references: allocate sufficient resources to train your staff through briefings, well-designed pedagogical material, realistic real time simulations, interactive conferences and modern technologies, constitute a team of trainers who will further disseminate the knowledge and best practices and assist the community during the fieldwork.

3.5 Change is a great opportunity of personal and collective development

3.5.1 The comfort zone is a [psychological state](#) in which people are at ease and in control of their environment and experience low levels of anxiety and stress³. In this zone, people feel comfortable because they do what they can do and what they are used to doing but there is no learning in the

³ [Alasdair A. K. White](#) "From Comfort Zone to Performance Management"

comfort zone and the performance remains steady.

3.5.2 The Change process forces the organization's staff to step out of the comfort zone and to be involved in continuous learning to master new procedures, new technologies, new concepts. Thus Change can be regarded as a very positive opportunity for personal and collective development as long as the appropriate support is applied throughout the Change process to ease the feelings of insecurity, during the learning process.

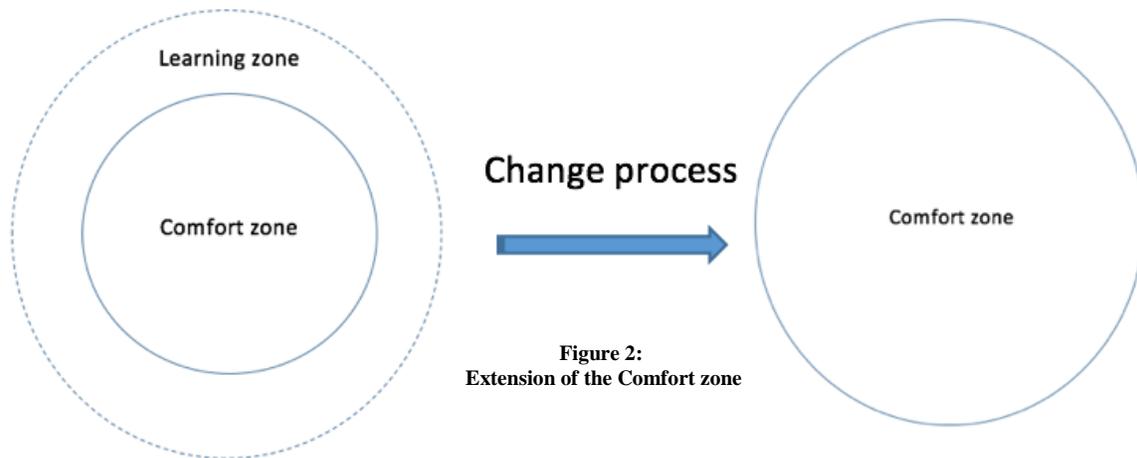


Figure 2:
Extension of the Comfort zone

4. Conclusion

4.1.1 Change Management is a key component in the success of project's implementations and should call for the highest attention of the Aviation Stakeholders to ensure a safe and efficient implementation of a sustainable Change. The possible criticality related to change recommends to define and apply appropriate and specific actions throughout the project to facilitate the Change process and encourage the involvement of all the organization including managers and front-line operators. Moreover, a large communication and sufficient resources allocated to training have also to be secured in order to facilitate the acceptability of the Change process.

4.1.2 When projects are managed on behalf of third parties it is also recommended to emphasize the importance of taking Change Management in high consideration in order to facilitate the competency transfer and anchor the Change rapidly and deeply in the organization for sustainable and meaningful modernization projects.

5. Action by the conference

5.1 The meeting is invited to:

- a. Note the information contained in this paper
- b. Include specific Change management actions in the frame of the NCLB Campaign to ensure safe, efficient and sustainable projects implementations and progresses.
- c. Discuss any other relevant matters as appropriate